What business owes Darwin and other reflections on competitive dynamics

The Origin of Strategy

by Bruce D. Henderson

Scaphite
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Consider this lesson in strategy. In 1934, Professor G.F. Gause of Moscow University, known as "the father of mathematical biology," published the results of a set of experiments in which he put two very small animals (protozoans) of the same genus in a bottle with an adequate supply of food. If the animals were of different species, they could survive and persist together. If they were of the same species, they could not. This observation led to Gause's Principle of Competitive Exclusion: No two species can coexist that make their living in the identical way.

Competition existed long before strategy. It began with life itself. The first one-cell organisms required certain resources to maintain life. When these resources were adequate, the number grew from one generation to the next. As life evolved, these organisms became a resource for more complex forms of life, and so on up the food chain. When any pair of species competed for some essential resource, sooner or later one displaced the other. In the absence of counterbalancing forces that could maintain a stable equilibrium by giving each species an advantage in its own territory, only one of any pair survived.

Over millions of years, a complex network of competitive interaction developed. Today more than a million distinct existing species have been cataloged, each with some unique advantage in competing for the resources it requires. (There are thought to be millions more as yet unclassified.) At any given time, thousands of species are becoming extinct and thousands more are emerging.

What explains this abundance? *Variety*. The richer the environment, the greater the number of potentially significant variables that can give each species a unique advantage. But also, the richer the environment, the greater the potential number of competitors – and the more severe the competition.

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For millions of years, natural competition involved no strategy. By chance and the laws of probability, competitors found the combinations of resources that best matched their different characteristics. This was not strategy but Darwinian natural selection, based on adaptation and the survival of the fittest. The same pattern exists in all living systems, including business.

In both the competition of the ecosphere and the competition of trade and commerce, random chance is probably the major, all-pervasive factor. Chance determines the mutations and variations that survive and thrive from generation to generation. Those that leave relatively fewer offspring are displaced. Those that adapt best displace the rest. Physical and structural characteristics evolve and adapt to match the competitive environment. Behavior patterns evolve too and become embedded as instinctual reactions.

In fact, business and biological competition would follow the same pattern of gradual evolutionary change except for one thing. Business strategists can use their imagination and ability to reason logically to accelerate the effects of competition and the rate of change. In other words, imagination and logic make strategy possible. Without them, behavior and tactics are either intuitive or the result of conditioned reflexes. But imagination and logic are only two of the factors that determine shifts in competitive equilibrium. Strategy also requires the ability to understand the complex web of natural competition.

Evolution determines who survives and who is crowded out—in business just as surely as in the jungle.

Trilobite
Delta, Utah

If every business could grow indefinitely, the total market would grow to an infinite size on a finite earth. It has never happened. Competitors perpetually crowd each other out. The fittest survive and prosper until they displace their competitors or outgrow their resources. What explains this evolutionary process? Why do business competitors achieve the equilibrium they do?

Remember Gause's Principle. Competitors that make their living in the same way cannot coexist—no more in business than in nature. Each must be different enough to have a unique advantage. The continued existence of a number of competitors is proof per se that their advantages over each other are mutually exclusive. They may look alike, but they are different species.

Consider Sears, K mart, Wal-Mart, and Radio Shack. These stores overlap in the merchandise they sell, in the customers they serve, and in the areas where they operate. But to survive, each of these retailers has had to differentiate itself in important ways, to dominate different segments of the market. Each sells to different customers or offers different values, services, or products.

What differentiates competitors in business may be purchase price, function, time utility (the difference between instant gratification and "someday, as soon as possible"), or place utility (when your heating and cooling system quits, the manufacturer's technical expert is not nearly as valuable as the local mechanic). Or it may be nothing but the customer's perception of the product and its supplier. Indeed, image is often the only basis of comparison between similar but different alternatives. That is why advertising can be valuable.

Since businesses can combine these factors in many different ways, there will always be many possibilities for competitive coexistence. But also, many possibilities for each competitor to enlarge the scope of its advantage by changing what differentiates it

from its rivals. Can evolution be planned for in business? That is what strategy is for.

Strategy is a deliberate search for a plan of action that will develop a business's competitive advantage and compound it. For any company, the search is an iterative process that begins with a recognition of where you are and what you have now. Your most dangerous competitors are those that are most like you. The differences between you and your competitors are the basis of your advantage. If you are in business and are self-supporting, you already have some kind of competitive advantage, no matter how small or subtle. Otherwise, you would have gradually lost customers faster than you gained them. The objective is to enlarge the scope of your advantage, which can happen only at someone else's expense.

Marketing wars are forever. Market share is malarkey.

Ammonite
Tindouf Basin, Morocco

Chasing market share is almost as productive as chasing the pot of gold at the end of the rainbow. You can never get there. Even if you could, you would find nothing. If you are in business, you already have 100% of your own market. So do your competitors. Your real goal is to expand the size of your market. But you will always have 100% of your market, whether it grows or shrinks.

Your present market is what, where, and to whom you are selling what you now sell. Survival depends on keeping 100% of this market. To grow and prosper, however, you must expand the market in which you can maintain an advantage over any and all competitors who might be selling to your customers.

Unless a business has a unique advantage over its rivals, it has no reason to exist. Unfortunately, many businesses compete in important areas where they operate at a disadvantage—often at great cost, until, inevitably, they are crowded out. That happened to Texas Instruments and its pioneering personal computer. TI invented the semiconductor; its business was built on instrumentation. Why was it forced out of the personal computer business?

Many executives have been led on a wild goose chase after market share by their inability to define the potential market in which they would, or could, enjoy a competitive advantage. Remember the Edsel? And the Mustang? Xerox invented the copying machine; why couldn't IBM become a major competitor in this field? What did Kodak do to virtually dominate the large-scale business copier market in the United States? What did Coca-Cola do to virtually dominate the soft drink business in Japan?

But what is market share? Grape Nuts has 100% of the Grape Nuts market, a smaller percentage of the breakfast cereal market, an even smaller percentage of the packaged-foods market, a still smaller percentage of the packaged-goods shelf-space market, a tiny percentage of the U.S. food market, a minuscule percentage of the world food market, and a microscopic percentage of total consumer expenditures.

Market share is a meaningless number unless a company defines the market in terms of the boundaries separating it from its rivals. These boundaries are the points at which the company and a particular competitor are equivalent in a potential customer's eyes. The trick lies in moving the boundary of advantage into the potential competitor's market and keeping that competitor from doing the same. The competitor that truly has an advantage can give potential customers more for their money and still have a larger margin between its cost and its selling

price. That extra can be converted into either growth or larger payouts to the business's owners.

So what is new? The marketing wars are forever. But market share is malarkey.

Strategy is the management of natural competition. That is how it compresses time.

Fossil Fish
Green River, Wyoming

Strategic competition compresses time. Competitive shifts that might take generations to evolve instead occur in a few short years. Strategic competition is not new, of course. Its elements have been recognized and used ever since humans combined intelligence, imagination, accumulated resources, and coordinated behavior to wage war. But strategic competition in business is a relatively recent phenomenon. It may well have as profound an impact on business productivity as the industrial revolution had on individual productivity.

The basic elements of strategic competition are these: (1) ability to understand competitive behavior as a system in which competitors, customers, money, people, and resources continually interact; (2) ability to use this understanding to predict how a given strategic move will rebalance the competitive equilibrium; (3) resources that can be permanently committed to new uses even though the benefits will be deferred; (4) ability to predict risk and return with enough accuracy and confidence to justify that commitment; and (5) willingness to act.

This list may sound like nothing more than the basic requirements for making any ordinary investment. But strategy is not that simple. It is all-encompassing, calling on the commitment and dedication of the whole organization. Any competitor's failure to react and then deploy and commit its own resources against the strategic move of a rival can turn existing competitive relationships upside down. That is why strategic competition compresses time. Natural competition has none of these characteristics.

Natural competition is wildly expedient in its moment-to-moment interaction. But it is inherently conservative in the way it changes a species's characteristic behavior. By contrast, strategic commitment is deliberate, carefully considered, and tightly reasoned. But the consequences may well be radical change in a relatively short period of time. Natural competition is evolutionary. Strategic competition is revolutionary.

Natural competition works by a process of low-risk, incremental trial and error. Small changes are tried and tested. Those that are beneficial are gradually adopted and maintained. No need for foresight or commitment, what matters is adaptation to the way things are now. Natural competition can and does evolve exquisitely complex and effective forms eventually. Humans are just such an end result. But unmanaged change takes thousands of generations. Often it cannot keep up with a fast-changing environment and with the adaptation of competitors.

By committing resources, strategy seeks to make sweeping changes in competitive relationships. Only two fundamental inhibitions moderate its revolutionary character. One is failure, which can be as far-reaching in its consequences as success. The other is the inherent advantage that an alert defender has over an attacker. Success usually depends on the cul-

ture, perceptions, attitudes, and characteristic behavior of competitors and on their mutual awareness of each other.

This is why, in geopolitics and military affairs as well as in business, long periods of equilibrium are punctuated by sharp shifts in competitive relationships. It is the age-old pattern of war and peace and then war again. Natural competition continues during periods of peace. In business, however, peace is becoming increasingly rare. When an aggressive competitor launches a successful strategy, all the other businesses with which it competes must respond with equal foresight and dedication of resources.

Biologists are better guides to business than economists.

Scaphite
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In 1975, the British War Office opened its classified files on World War II. Serious readers of these descriptions of "war by other means" may feel inclined to revise their thinking about what happened in that war and about strategy generally, particularly the differences between actual strategies and apparent strategies.

The evidence is clear that the outcome of individual battles and campaigns often depended on highly subjective evaluations of the combatants' intentions, capabilities, and behavior. But until the records were unsealed, only people who were directly involved appreciated this. Historians and other observers ascribed victories and defeats to grand military plans or chance.

Also in 1975, Edward O. Wilson published *Sociobiology*, a landmark study in which he tried to synthesize all that is known about population biology, zoology, genetics, and animal behavior. What emerged was a framework for understanding the success of species in terms of social behavior—that is, competition for resources. This synthesis is the closest approach to a general theory of competition that I know of. It provides abundant parallels for business behavior as well as for the economic competition that characterizes our own species.

Human beings may be at the top of the ecological chain, but we are still members of the ecological community. That is why Darwin is probably a better guide to business competition than economists are.

Classical economic theories of business competition are so simplistic and sterile that they have been less contributions to understanding than obstacles. These theories postulate rational, self-interested behavior by individuals who interact through market exchanges in a fixed and static legal system of property and contracts. Their frame of reference is "perfect competition," a theoretical abstraction that never has existed and never could exist.

In contrast, Charles Darwin's *On the Origin of Species*, published in 1859, outlines a more fruitful perspective and point of departure for developing business strategy: "Some make the deep-seated error of considering the physical conditions of a country as the most important for its inhabitants; whereas it cannot, I think, be disputed that the nature of the other inhabitants with which each has to compete is generally a far more important element of success."

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